

Press Release

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FC1500-Quantum: Complete solution for cold atom applications

Menlo Systems' FC1500-Quantum is the all-in-one solution for your Quantum 2.0 application. Whether your intent is to build a quantum optical clock, an atom interferometry experiment, or a quantum computer based on ions or neutral atoms, Menlo Systems will tailor a system according to your requirements and deliver an engine for operating your physics package. This rack-mounted system consists of Menlo's ORS Ultrastable Laser with a sub-Hz linewidth, an FC1500-250-ULN Ultra Low Noise Optical Frequency Comb with light in the visible and infrared spectral range, and several customizable CW lasers. The ULN comb transfers the narrow linewidth and stability of the ultrastable laser throughout the entire comb spectrum, and via high-fidelity phase-lock loops stabilizes the CW lasers required to drive atomic transitions of the application. Optical lattice clocks and quantum computers based on ions or neutral atoms require up to eight lasers operating at specific frequencies. The FC1500-Quantum includes them all in three 19" racks, providing sub-Hz linewidth and accurately tuned CW lasers in optical fibers ready to be sent to your physics package. For instance: For the critical clock transition at 698 nm in neutral strontium, a spectral purity transfer down to the 10^{-18} level at 1 second is achieved. Among CW laser manufacturers, we integrate lasers from MOGLabs, AOSense, Toptica Extended Cavity Diode Lasers, NKT Photonics fiber lasers, and M-Squared Ti:Sapphire lasers.



Figure: FC1500-Quantum Complete CW Laser System with Optically Referenced Frequency Comb

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About Menlo Systems:

Precision in Photonics. Together we shape light.

Menlo Systems GmbH is a leading developer and global supplier of instrumentation for high-precision metrology. The company with headquarters in Martinsried near Munich is known for its Nobel Prize winning optical frequency comb technology. With subsidiaries in the US and China and a global distributor network, Menlo Systems is closely connected to its customers from science and industry. The main product lines are optical frequency combs, time and frequency distribution, terahertz systems, ultrafast and ultrastable lasers, and corresponding control electronics. Besides standard production, Menlo Systems develops and manufactures custom made solutions for laser-based precision measurements.
